

REMARKS

Initially, Applicant would like to express appreciation to the Examiner for the detailed Official Action provided, and for the acknowledgment of Applicant's Information Disclosure Statement by return of the Form PTO-1449.

However, Applicant notes that the Examiner has not acknowledged Applicant's **Claim for Priority** and receipt of the certified copy of the priority document. It is noted that the Patent Application Information Retrieval (PAIR) system on the U.S. Patent and Trademark Office website reflects receipt of Applicants' Claim for Priority and the certified copy of the priority document on January 24, 2006 in the instant application. Accordingly, the Examiner is requested to acknowledge receipt of Applicant's Claim for Priority and receipt of the certified copy of the priority document in the next Official Action.

Upon entry of the above amendment, claims 1 and 2 will have been amended. Accordingly, claims 1, 2, and 4-16 are currently pending. Applicants respectfully request reconsideration of the outstanding rejections and allowance of claims 1, 2, and 4-16 in the present application. Such action is respectfully requested and is now believed to be appropriate and proper.

Claims 1, 2, 8, and 15 have been rejected under 35 U.S.C. § 102(b) as being anticipated by POULOS et al. (U.S. Patent No. 5,279,314).

Although Applicant does not necessarily agree with the Examiner's rejection of the claims on this ground, nevertheless, Applicant has amended independent claims 1 and 2 to clearly obviate the above noted ground of rejection in order to expedite prosecution of the present application. In this regard, Applicant notes that the POULOS et al. patent

fails to show each and every element recited in the amended claims. In particular, claim 1, as amended, sets forth an electric dental flosser including, inter alia, a drive shaft, a drive mechanism, floss holder, and “a flosser element stretched on the floss holder; wherein the flosser element is held taut in a direction perpendicular to an axial direction of the drive shaft so as to pass across an extension line of the drive shaft”. Thus, claim 1 has been amended to delete the phrase --or a position adjacent thereto--. Claim 2, as amended, sets forth an electric dental flosser including, inter alia, a drive shaft, a drive mechanism, a floss holder, and “a flosser element stretched taut between the opposite distal end portions of the floss holding portion; wherein an intermediate portion of a line connecting an intermediate portion of the flosser element and the proximal end portion of the floss holding portion is positioned on an extension line of the drive shaft”. Thus, claim 2 has been amended to delete the phrase --or a neighborhood thereof--.

This amendment is fully supported by the specification, including the claims and drawings, and no prohibited new matter has been added.

The present invention provides an electric dental flosser including a dental flosser body 2 with a cylindrical casing 11, a drive shaft 4 projecting from the end portion of the dental flosser body 2, and floss holder 3 mounted on the drive shaft 4. The drive shaft 4 is supported within the end portion of the dental flosser body 2 such that the longitudinal axis of the drive shaft 4 is aligned with and coaxial with the longitudinal axis of the dental flosser body 2. See particularly figure 1B. The drive mechanism is constructed such that the rotational motion about the motor shaft 15 is converted to *rotational oscillating motion about the drive shaft 4*. Further, the floss holder 3 is mounted at its proximal end to an end of the drive shaft 4. The floss holder 3 includes a curved neck

portion 8 mounted on the drive shaft 4, and a floss holding portion 6 formed with the neck portion 8 to hold a flosser element 5. The neck portion 8 curves away from the proximal end portion of the floss holder 3 so that the neck portion 8 is spaced from the extension line A of the longitudinal axis of the drive shaft 4. The floss holding portion 6 is formed on the distal end of the neck portion 8, and holds a flosser element 5 such that the flosser element 5 extends in a direction perpendicular to the longitudinal axis of the drive shaft 4, and passes across the extension line A. Further, the intermediate portion of the flosser element 5 crosses the extension line A. Accordingly, the configuration of the electric dental flosser, including the shape of the neck portion 8 of the floss holder 3, positions the elements of the device to that *the flosser element 5 is positioned on the extension line A of the drive shaft 4*. When the motor 12 is driven, rotation of the motor shaft 15 causes *rotational oscillation of the drive shaft 4 about its longitudinal axis* and rotational oscillation of the floss holder 3, causing *rotational oscillation of both the floss holding portion 6 and the flosser element 5 about the extension line A* of the drive shaft 4. See page 8, line 15 through page 10, line 11.

This configuration of the electric dental flosser of the instant invention provides advantages and improvements over the prior art. For example, since the flosser element 5 extends in a direction perpendicular to the axis of the drive shaft 4 and passes across the extension line A, the distance between the extension line A and the distal end portions of the floss holding portion 6 is small. Thus, when the electric dental flosser apparatus 1 is in operation, the width C of oscillation of the distal end portions of the floss holding portion is reduced, compared with the conventional electric dental flossers. See particularly figure 3. This configuration provides the advantage that the opposite distal

end portions of the floss holding portion 6 will not interfere with the teeth and the internal walls of the mouth, improving the comfort and decreasing unpleasantness to the user, and accomplishing safe and effective flossing. Additionally, since the flosser element 5 is positioned to pass across the extension line A, the electric dental flosser 1 of the present invention also has the advantage that the intermediate portion of the flosser element is easily insertable between the teeth. See page 10, line 12 through page 11, line 2.

The POULOS et al. patent discloses an electric dental flosser including a drive shaft 100, a rotatable drive mechanism 70, and a floss holder 120. However, as shown in the figures, the POULOS et al. device does not include a drive mechanism that rotationally oscillates the drive shaft about its own axis. In this regard, it is noted that the drive shaft 100 is positioned off-center of the midline A of the electric dental flosser, as shown in figure 4. The POULOS et al. device includes a centrally positioned motor shaft 35, as shown in figure 2 (column 5, lines 55-65). The unit also includes a cam body 70 having a peg 76, that is offset from the center of the cam body (column 6, lines 47-57). The shaft 100 extends from the body portion 104 and is mounted on a collar 80 that is mounted on the peg 76 of the cam body 70, such that the shaft 100 is mounted offcenter of the longitudinal axis of the motor shaft 35. This configuration of the offcenter-mounted shaft 10 is clearly shown in figure 4. Accordingly, since the motor shaft 35 is rotated about its own axis, and since the shaft 100 is mounted offcenter of the motor shaft 35, the shaft 100 rotates about the axis of the motor shaft 35. Therefore, the shaft 100 does *not* rotate about its own axis, as in Applicant's claimed invention.

Additionally, it is respectfully submitted that in the POULOS et al. device, the flosser element does not extend so as to pass across the extension line of the drive shaft.

In this regard, as shown in figure 4, the flosser element is shown as passing across the extension line A. However, the extension line A is an extension of the motor shaft 35. The extension line A is not an extension line of the drive shaft 100. Further, as clearly shown in figure 4, an extension of the drive shaft 100 would extend parallel to the extension line A, completely missing the flosser element. Therefore, the flosser element does pass not across an extension line of the drive shaft, as in Applicant's claimed invention.

Further, it is respectfully submitted that in the POULOS et al. device, an intermediate portion of a line connecting an intermediate portion of the flosser element and the proximal end of the floss holding portion is not positioned on an extension line of the drive shaft. In this regard, as shown in figure 4, the flosser element is shown as passing across the extension line A. However, the extension line A is an extension of the motor shaft 35. The extension line A is not an extension line of the drive shaft 100. Further, as clearly shown in figure 4, an extension of the drive shaft 100 would extend parallel to the extension line A, completely missing the flosser element. Therefore, the POULOS et al. device does not include an intermediate portion of a line connecting an intermediate portion of the flosser element and the proximal end of the floss holding portion positioned on an extension line of the drive shaft, as in Applicant's claimed invention.

Thus, the POULOS et al. patent does not show a an electric dental flosser including, inter alia, a drive shaft, a drive mechanism, floss holder, and "a flosser element stretched on the floss holder; wherein the flosser element is held taut in a direction perpendicular to an axial direction of the drive shaft so as to pass across an extension line

of the drive shaft”, as set forth in amended claim 1. Further, the POULOS et al. patent does not show an electric dental flosser including, inter alia, a drive shaft, a drive mechanism, a floss holder, and “a flosser element stretched taut between the opposite distal end portions of the floss holding portion; wherein an intermediate portion of a line connecting an intermediate portion of the flosser element and the proximal end portion of the floss holding portion is positioned on an extension line of the drive shaft”, as set forth in amended claim 2. Since the reference fails to show each and every element of the claimed device, the rejection of claims 1 and 2 under 35 U.S.C. § 102(b) over POULOS et al. is improper and withdrawal thereof is respectfully requested.

Applicant submits that dependent claims 8 and 15, which are at least patentable due to their dependency from claims 1 and 2 for the reasons noted above, recite additional features of the invention and are also separately patentable over the prior art of record based on the additionally recited features. In particular, Applicant submits that none of the cited prior art teaches or suggests an electric dental flosser including “wherein the floss holder comprises a neck portion mounted on the drive shaft and a floss holding portion mounted on the neck portion, and wherein the floss holding portion is inclined such that the flosser element stretched on the floss holding portion is positioned on a further distal end side beyond a distal end of the neck portion in an axial direction of the drive shaft”, as set forth in claims 8 and 15. Accordingly, claims 8 and 15 are each separately patentable for these additional reasons.

Claims 4-7, 9, 11, 14, and 16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over POULOS et al. in view of IMAI et al. (U.S. Patent No. 5,170,809).

Applicant notes that POULOS et al. fails to teach or suggest the subject matter claimed in amended independent claims 1 and 2, as described above. Further, IMAI et al. fails to cure these deficiencies. Moreover, there is nothing in the cited prior art that would lead one of ordinary skill in the art to make the modification suggested by the Examiner in the rejection of claims 4-7, 9, 11, 14, and 16 under 35 U.S.C. § 103(a) over POULOS et al. in view of IMAI et al. Thus, the only reason to combine the teachings of POULOS et al. and IMAI et al. results from a review of Applicant's disclosure and the application of impermissible hindsight. Even if the teachings of POULOS et al. and IMAI et al. were combined, as suggested by the Examiner, the claimed combination would not result. Accordingly, the rejection of claims 4-7, 9, 11, 14, and 16 under 35 U.S.C. § 103(a) over POULOS et al. in view of IMAI et al. is improper for all the above reasons and withdrawal thereof is respectfully requested.

Claim 10 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over POULOS et al. in view of STERN (U.S. Patent No. 6,138,689).

Applicant notes that POULOS et al. fails to teach or suggest the subject matter claimed in amended independent claim 2, as described above. Further, STERN fails to cure these deficiencies. Moreover, there is nothing in the cited prior art that would lead one of ordinary skill in the art to make the modification suggested by the Examiner in the rejection of claim 10 under 35 U.S.C. § 103(a) over POULOS et al. in view of STERN. Thus, the only reason to combine the teachings of POULOS et al. and STERN results from a review of Applicant's disclosure and the application of impermissible hindsight. Even if the teachings of POULOS et al. and STERN were combined, as suggested by the Examiner, the claimed combination would not result. Accordingly, the rejection of claim

10 under 35 U.S.C. § 103(a) over POULOS et al. in view of STERN is improper for all the above reasons and withdrawal thereof is respectfully requested.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections, and an early indication of the allowance of claims 1, 2, and 4-16.

SUMMARY AND CONCLUSION

In view of the foregoing, it is submitted that the present amendment is proper and that none of the references of record, considered alone or in any proper combination thereof, anticipate or render obvious Applicant's invention as recited in claims 1, 2, and 4-16. The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

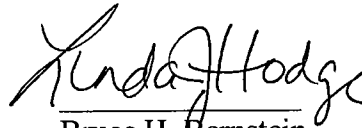
Accordingly, consideration of the present amendment, reconsideration of the outstanding Official Action, and allowance of the present amendment and all of the claims therein are respectfully requested and now believed to be appropriate.

Applicant has made a sincere effort to place the present application in condition for allowance and believe that he has now done so.

Any amendments to the claims which have been made in this amendment, which do not narrow the scope of the claims, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered cosmetic in nature, and to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should there be any questions, the Examiner is invited to contact the undersigned
at the below listed number.

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